



# Course Outline

## Annual International Training Course

**1. Course Title:** Climate Change Mitigation & Adaptation: Pathways for Sustainable Development

**2. Duration:** 19-30 May 2025 (10 Working days)

**3. Background:**

Climate change, an undeniable global issue, strongly influences sustainable development. The importance of the climate change issue can be seen in the United Nations Sustainable Development Goals (SDGs) as Goal No. 13, which aims to take urgent action to combat climate change and its impacts. A warming climate alters natural ecosystems and the productivity of human food sources, thus hindering sustainable development speed. Developing and least developed countries will be affected the most, partly due to the lack of abilities to cope with those changes. Although redressing a changed climate system may not be possible at this stage, mitigation and adaptation measures can be employed to minimize the impact of climate change on several sectors. Thus, mitigation and adaptation measures can be viewed as tools for shaping global development direction.

The real problem in implementing mitigation & adaptation measures lies in the fact that the understanding of the concept for both measures is limited in poor developing and least developed countries. Moreover, at times, measures employed in one local area may not apply to another area. Thus, designing a policy or program appropriate to each locality is crucial. This training course aims to provide participants with information via lectures, classroom activities, and field visits. In addition, mitigation and adaptation practices in Thailand, such as smart farming, agricultural sector, and micro-grid energy production system, will be covered to provide the participants with best case practices.

**4. Organization/Institution**

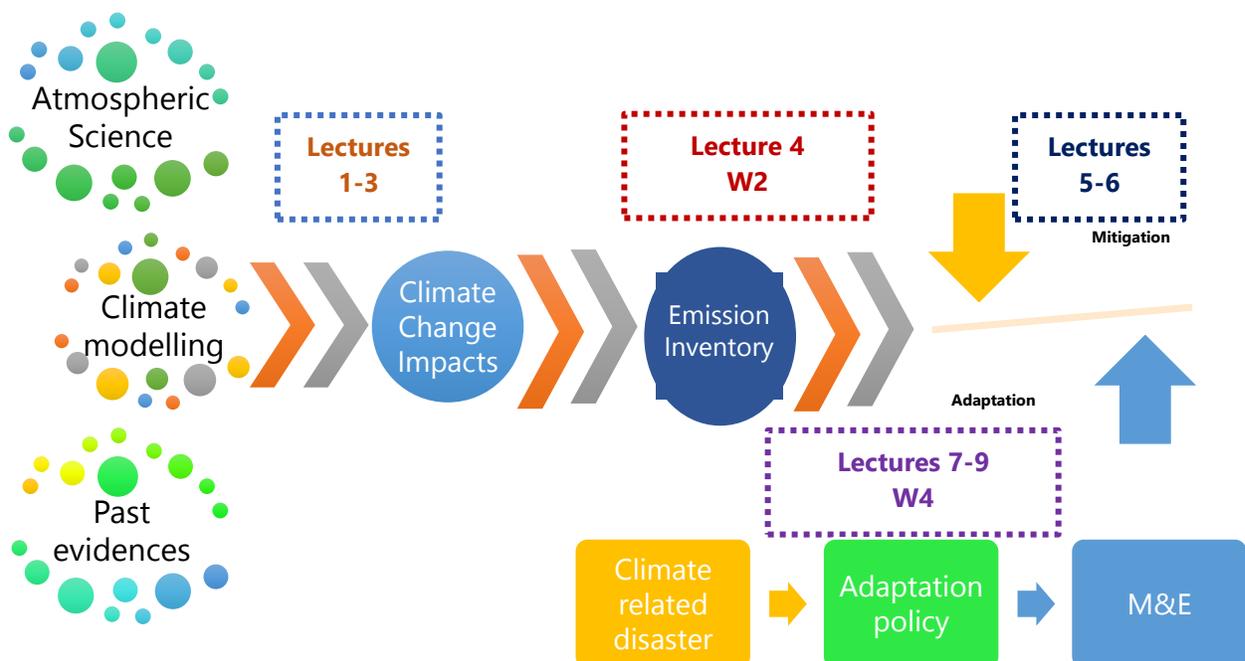
Environmental Science Research Center, Faculty of Science, Chiang Mai University

## 5. Objectives:

The program is designed to enhance participants' knowledge in climate change mitigation and adaptation that enormously facilitates sustainable development by reducing climate change's impacts on livelihood. In addition, the course also intends to provide hands-on experience for the participants in various aspects related to climate change mitigation & adaptation planning and implementation via class exercises, assignments, and discussion sessions.

## 6. Course Contents:

The course will provide participants with nine lectures and four workshops, as shown in the diagram below. The course is designed to provide participants with basic knowledge of atmospheric science, evidence-based impacts of climate change, and the tools for climate monitoring. Then participants will learn and carry out the calculation of GHG emissions to develop GHG inventory. The workshop on this Topic will also provide participants with the development of mitigation measures for the selected sector. Finally, we will discuss various kinds of mitigation and adaptation measures based on the emission inventory. However, due to the lack of understanding in adaptation policy design, the steps in drafting/designing of adaptation policy will be covered with an exercise in which participants will have to present their work on the last day of the training program.



## **7. Participants' Criteria:**

Applicants must fulfill the following requirements:

- Be nominated by their respective governments;
- Education: Bachelor's degree with basic knowledge in environmental science or deals with environmental issues in their work.
- Language: proficiency in English (speaking, reading, and writing)

## **8. Attendance and Evaluation**

Participants who complete the training will receive a certificate based on:

- Real-time class attendance (not less than 80%)
- Interactive class participation
- Presentation and report
- Overall assessment

## **9. Venue: Online Training Program**

## **10. Expected Results:**

Upon completion of this training course, participants will be able to perform the following tasks;

- a. Explain the relationship between climate change and sustainable development, emphasizing how mitigation and adaptation measures can be used to facilitate sustainable development.
- b. Understand the theory behind GHGs emission calculation and calculate gas emissions from the selected sector.
- c. Develop an adaptation policy/action plan that is suitable for local conditions.

## **11. Organization/ Institution:**

- **Implementing Agency;** Environmental Science Research Center (ESRC),  
Faculty of Science, Chiang Mai University

Address: Environmental Science Research Center,  
Faculty of Science, Chiang Mai University,  
239 Huay Kaew Road, Tambon Suthep, Mueng District,  
Chiang Mai 50200

- **Contact Person** Assoc. Prof. Dr. Alice Sharp (Training Course Working Group Leader) E-mail: [alice.sharp@cmu.ac.th](mailto:alice.sharp@cmu.ac.th)

## 12. Expenditure/Funding:

Thailand International Cooperation Agency (TICA)  
 Government Complex, Building B (South Zone), 8th Floor,  
 Chaengwattana Rd. Laksi District, Bangkok 10210 THAILAND  
 Website: <https://tica-thaigov.mfa.go.th/en/index>  
 Email: [aitc@mfa.go.th](mailto:aitc@mfa.go.th)

## Schedule for the Training Programme:

Date/ Period /Topic	Time (Thailand time)	Content	Speaker	Note
<b>Day 1 : 19 May 2025</b>				
	9.00-10.00	Program orientation	Facilitator team	
<b>Climate Change Science</b>	10.00-12.00	Lecture 1 Climate change: background and future trends	Dr. Kullapa C.	
	13.00-16.00	Lecture 2 <ul style="list-style-type: none"> <li>• Impacts of human activities on climate change</li> <li>• Impacts of climate change on various sectors</li> </ul>	Dr. Nuttipon Y.	
<b>Day 2 : 20 May 2025</b>				
<b>Country report presentation</b>	9.00-12.00	Country report presentation	All Participants	
	13.00-16.00			
<b>Day 3 : 21 May 2025</b>				

<b>Monitoring tools</b>	9.00-12.00	Lecture 3 Tools in climate change monitoring	Dr. Nuttipon Y.	
	13.00-16.00	Workshop 1 Tools in climate change monitoring	Dr. Alice S. Dr. Pumis T. Dr. Kullapa C. Dr. Nuttipon Y. TA	
<b>Day 4 : 22 May 2025</b>				
<b>GHG inventory</b>	9.00-12.00	Lecture 4 Estimation of GHGs emission	Dr. Alice S.	
	13.00-16.00	Workshop 2 GHGs calculation exercise	Dr. Alice S. Dr. Pumis T. Dr. Kullapa C. Dr. Nuttipon Y. TA	
<b>Day 5 : 23 May 2025</b>				
<b>GHG inventory</b>	9.00-12.00	Workshop 2 (Continued) GHGs calculation exercise	Dr. Alice S. Dr. Pumis T. Dr. Kullapa C. Dr. Nuttipon Y. TA	
	13.00-16.00			
<b>Day 6 : 26 May 2025</b>				
<b>Climate change measures</b>	9.00-12.00	Lecture 5 Climate change mitigation measures	Dr. Pumis T.	
	13.00-16.00	Lecture 6 Climate change adaptation measures	Dr. Kullapa C.	
<b>Day 7 : 27 May 2025</b>				
<b>Policy design</b>	9.00-12.00	Lecture 7 Adaptation policy design	Dr. Alice S.	
	13.00-16.00	Workshop 3	Dr. Alice S.	

		Adaptation measures exercise	Dr. Pumis T. Dr. Kullapa C. Dr. Nuttipon Y. TA	
<b>Day 8 : 28 May 2025</b>				
	9.00-12.00	Lecture 8 <ul style="list-style-type: none"> <li>• Disaster preparedness</li> <li>• Case studies</li> </ul>	Dr. Pumis T.	
	13.00-16.00	Workshop 4 Virtual Fieldtrip (Air Monitoring Station & Water bank and Coastal Erosion)	Dr. Alice S. Dr. Pumis T. Dr. Kullapa C. Dr. Nuttipon Y. TA	
<b>Day 9 : 29 May 2025</b>				
	9.00-16.00	Lecture 9 <ul style="list-style-type: none"> <li>• Climate Change MRV and M&amp;E</li> <li>• Case studies</li> </ul>	Dr. Alice S.	
<b>Day 10 : 30 May 2025</b>				
	9.00-12.00 13.00-16.00	Final presentation Presentation of the country mitigation & adaptation plan	Dr. Alice S. Dr. Pumis T. Dr. Kullapa C. Dr. Nuttipon Y. TA	